

Claims

1. A liposome to which a polyalkylene glycol and albumin are bonded.

5 2. The liposome according to claim 1, wherein a physiologically active ingredient is further contained.

3. The liposome according to claim 2, wherein the physiologically active ingredient is a pharmaceutically active ingredient.

10 4. The liposome according to claim 3, wherein the pharmaceutically active ingredient is an antitumor agent.

5. A pharmaceutical composition containing the liposome mentioned in any one of claims 2 to 4.

15 6. The pharmaceutical composition according to claim 5, which is an injection.

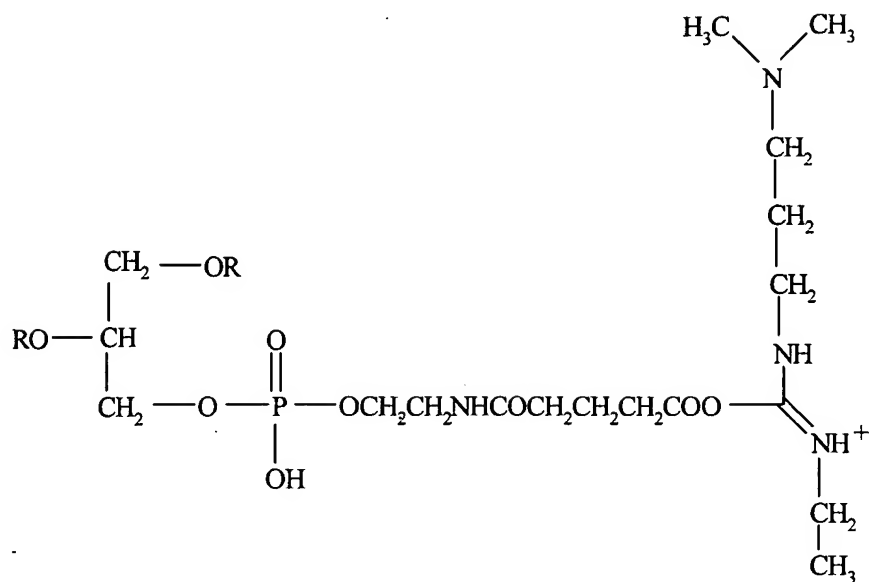
7. A method for treatment of cancer, which comprises administering a pharmaceutical composition comprising a liposome to which a polyalkylene glycol and albumin are bonded and in which an antitumor agent is contained.

20 8. Use of a liposome to which a polyalkylene glycol and albumin are bonded and in which a physiologically active ingredient is contained, for the extension of the in vivo retention time of the physiologically active ingredient.

9. A process for the production of the liposome of claim 1,

characterized in that,

a liposome having a compound represented by the following formula (1):

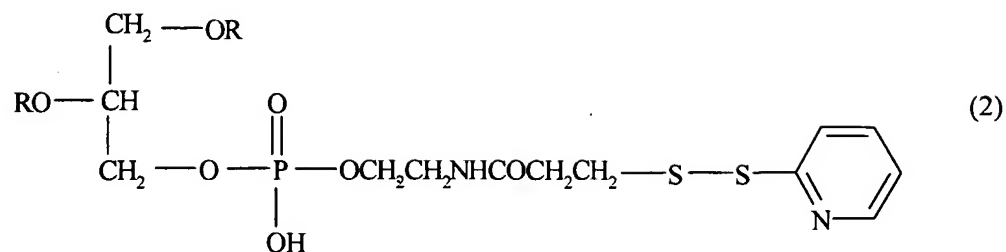


(1)

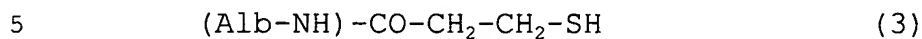
5 (wherein R is an acyl group derived from a fatty acid having 2 to 35 carbon atoms) as a constituent lipid is bonded to albumin;

a liposome having a compound represented by the following

formula (2):

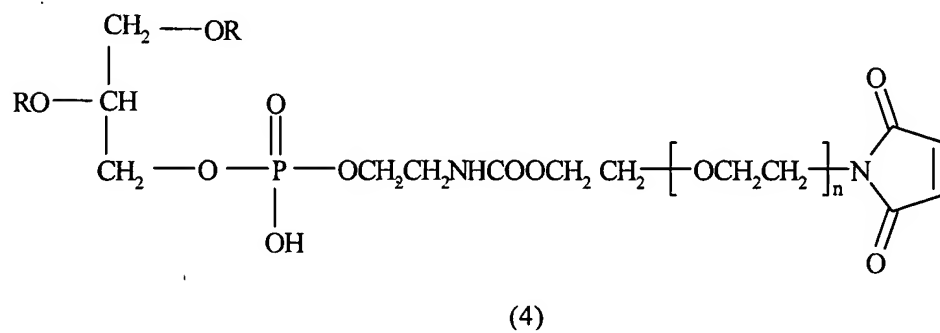


(wherein R has the same meaning as defined above) as a constituent lipid is bonded to a compound represented by the formula (3):

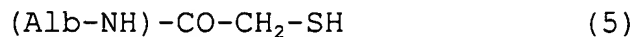


(wherein Alb-NH is a group formed by removing one hydrogen atom of the amino group from an albumin molecule represented by Alb-NH₂);

a liposome having a compound represented by the following formula (4):

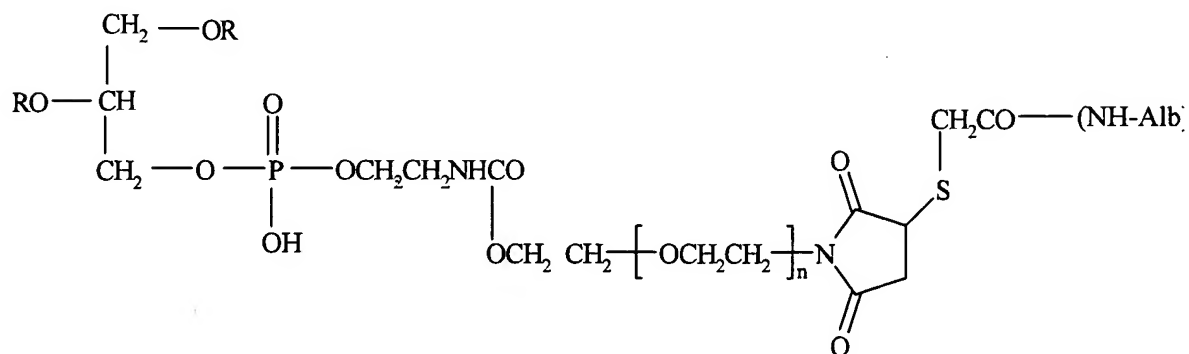


(wherein n is an integer of 5 to 100,000 and R has the same meaning as defined above) as a constituent lipid is bonded to a compound represented by the formula (5):



5 (wherein Alb-NH has the same meaning as defined above);

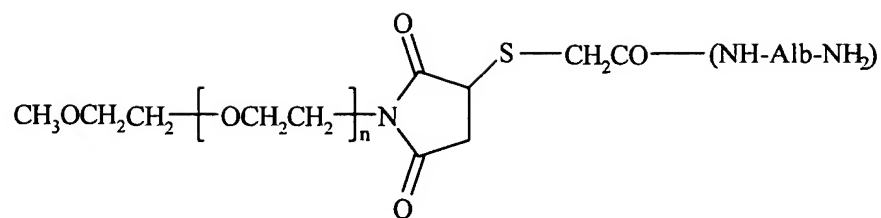
a compound represented by the following formula (6):



(6)

(wherein n, R and Alb-NH have each the same meaning as defined above) is inserted into a liposome;

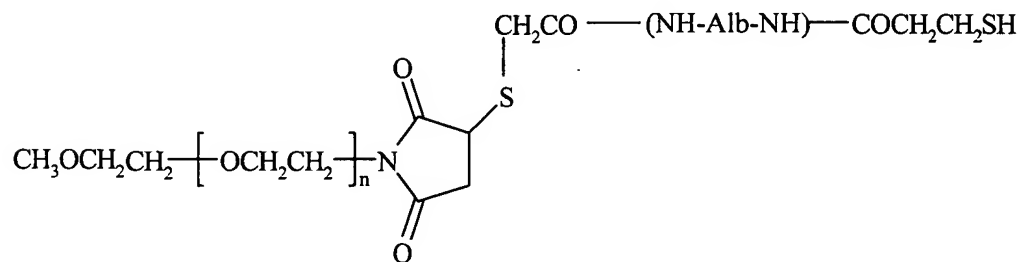
10 a liposome having the compound represented by the above formula (1) as a constituent lipid is bonded to a compound represented by the following formula (7):



(7)

(wherein -NH-Alb-NH₂ is a group formed by removing one hydrogen atom from one of the amino groups of an albumin molecule represented by H₂N-Alb-NH₂, and n has the same meaning as defined above); or

a liposome having the compound represented by the above formula (2) as a constituent lipid is bonded to a compound represented by the following formula (8):



(8)

(wherein -NH-Alb-NH- is a group formed by removing one hydrogen atom from each of the two amino groups of an albumin molecule represented by the formula $\text{H}_2\text{N-Alb-NH}_2$, and n has the same meaning as defined above).